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50. Proposed by J. K. ELLWOOD, A. M., Principal of Colfax School, Pittsburg, Pennsylvania.

Describe and compute the actual path traversed by the moon in July and August, 1896, taking into account the motion of the earth around the sun.

51. Proposed by F. M. SHIELDS, Coopwood, Mississippi.

A stock dealer traveled from his home H , due north across a lake L 40 miles wide to a city, and bought 156 horses and 177 mules for \$23631; he then traveled farther due north to A , and bought at same price 468 horses and 235 mules for \$52245; he then traveled from A due west 130 miles to B , and bought 120 cows; he then traveled due north to C , and bought 250 sheep; he then traveled from C due east 330 miles to D , and bought 300 goats,—paying 1-4 as much for cows as horses, and 1-9 as much for sheep as mules, and 1-2 as much for goats as sheep; at D he turned and traveled in a straight line to the city, a distance equal to the sum of the entire distance he traveled due north from his home H ; he sold all his stock at a profit of 20%. How far did he travel from his home H the entire trip around and back to the city? What was the cost of each head of stock, and what was the entire gain?

52. Proposed by I. J. WIREBACK, M. D., St. Petersburg, Pennsylvania.

What is the volume of a segment of a right cone, whose diameter is 6 inches and perpendicular 9 inches? The section being parallel with the perpendicular of the cone and includes 1-4 of its circumference at the base.

NOTES.

NOTE ON ARTICLE IN AUGUST-SEPTEMBER NUMBER, VOL. III.

BY WARREN HOLDEN.

Referring to the demonstration on page 207 (current volume) without disputing the conclusion, allow me to submit the following considerations:

In Algebra, when zero is a factor in any term, the product is zero. Accordingly $0 \times \infty = 0$. In the course of the demonstration appears the expression $\frac{0 \times 1}{0} = \frac{0}{0}$, or the denominators being equal, $0 \times 1 = 0$. Would this result affect the conclusion in any way?

NOTE ON ELIMINATION.

BY J. C. CORBIN, PINE BLUFF, ARKANSAS.

The operation of elimination by addition and subtraction may often be shortened by the process and rule given below:

I. $5x + 7y = 43.$

$11x + 9y = 69.$

To eliminate y . $(9 \times 5 - 7 \times 11)x = 9 \times 43 - 7 \times 69. \therefore x = 3.$

To eliminate x . $(11 \times 7 - 5 \times 9)y = 11 \times 43 - 5 \times 69. \therefore y = 4.$

$$\text{II. } 21x + 20y = 165.$$

$$77x - 30y = 295.$$

$$\text{To eliminate } x. \quad (3 \times 21 + 2 \times 77)y = 3 \times 165 + 2 \times 295. \quad \therefore y = 5.$$

$$\text{To eliminate } y. \quad (11 \times 20 + 3 \times 30)x = 11 \times 165 - 3 \times 295.$$

This is, substantially, the Determinant method ; but it is derived from the ordinary algebraic process by omitting all unessential work. The rule is : The difference (sum) of the products containing x (y) is equal to the difference (sum) of the numerical products.

EDITORIALS.

A few complete sets of Vol. I. and Vol. II. are still left. We will send Vol. I. to any address in the United States for \$2., and Vol. II. for \$2.50. Send in your order at once.

Prof. J. A. Calderhead, of Curry University, Pittsburg, Pennsylvania, sent in \$3. as his subscription to the MONTHLY for 1896. We are very thankful for the material encouragement the friends of the MONTHLY are giving it.

A conference of the American Mathematical Society will convene in room 35 of Ryerson Physical Laboratory of the University of Chicago, at 10 o'clock, Thursday forenoon, December 31, 1896. It is expected that the conference will have three or four sessions and will adjourn on Friday, January 1, 1897. During the sessions of this conference some very important subjects will be discussed. Let every one interested in Mathematics attend this conference.

BOOKS AND PERIODICALS.

The Elements of Plane Geometry. By Charles A. Hobbs, A. M., Mathematical Master in the Volkmann School, Boston, Mass. 8vo. Cloth and Leather Back, 240 pages. Price, 75 cents. New York : A. Lovell & Co.

In this book the author has taken what seems to him to be a middle ground between the method of the students' following set demonstrations of a number of propositions and that of the students' producing all the argument in the course of a demonstration from original resources. There are 720 original propositions throughout the book besides many numerical exercises. The book is worthy the recognition of teachers. B. F. B.